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Short communication

Floristic composition of a conservation area in the Federal District of Brazil[1]

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ABSTRACT – (Floristic composition of a conservation area in the Federal District of Brazil). *Cerradão* vegetation shares many species with savanna and forest areas and is one of the most vulnerable phytophysiognomies in the *Cerrado* (Brazilian savanna) biome. The floristic composition of the Cerradão Biological Reserve was examined between September/2007 and November/2008. A total of 282 species distributed among 194 genera and 75 families were encountered, demonstrating proportions of 0.91 herbaceous species and 0.54 shrub species for each tree species. Fabaceae, Asteraceae, Rubiaceae, Poaceae, Myrtaceae, Malpighiaceae, and Melastomataceae were the most species-rich families. Fully 72.3% of the species of this dystrophic cerradão were shared by cerrado and forest vegetations, while 60.43% were shared by other cerradão sites, although the largest proportion of species (91%) were shared with cerrado sensu stricto. No species was found to be exclusive to this cerradão site, but approximately 95% of all species were native to the Cerrado biome.

Key words - APA Gama e Cabeça de Veado, cerradão, flora, species richness

INTRODUCTION

Cerradão is typified by a continuous arboreal layer more than 7 m tall, with 50 to 90% total canopy coverage; the shrub layer is generally dense and composed largely of sclerophyllous species, while there is only a reduced herbaceous layer. Lianas and some climbers are common, but epiphytes are rare (Ribeiro & Walter 2008). Although cerradão constitutes a distinct *cerrado* (Brazilian savanna) phytophysiognomy, it does not have a distinctive flora, but rather a mix of floristic elements from cerrado sensu stricto and forests (Felfili 2002).

Very few studies have focused on the herbaceous/subshrub flora of cerradão, as this is a predominantly arboreal phytophysiognomy. Additionally, although an extensive survey of the flora of the Gama and Cabeça de Veado Environmental Protection Area – EPA (in portuguese: *Área de Proteção Ambiental* – APA) was undertaken, the Cerradão Biological Reserve (in portuguese, *Reserva Biológica* – REBIO), also located in this APA, has not been examined in any detail. The present study was designed to contribute to future planning and management of the area and to our general knowledge of the mixed flora of this under-protected phytophysiognomy.

MATERIAL AND METHODS

The present study was undertaken in the Cerradão REBIO, a conservation area created by Federal Decree nº 19.213/98 as an Area of Relevant Ecological Interest (in portuguese, *Área de Relevante Interesse Ecológico* – ARIE) and later transformed into a Biological Reserve (REBIO) by Federal Decree nº 31.757/10. This conservation area covers 54 ha (15°51' S and 47°49' W) and encompasses cerradão as well as dense cerrado vegetation. The regional climate is Tropical Altitudinal (Cwa by the Köppen classification system), with average temperatures in the coldest month below 18 °C, and above 22 °C in the warmest month; the average annual rainfall varies from 1,350 mm to 1,450 mm. This REBIO is extremely important in protecting the water resources of the Federal District, as the region supplies approximately 50% of the local aquifer recharge volume (Ibram 2010). The soils of the reserve are red latosols, similar to those found in other cerradão areas of the Gama and Cabeça de Veado EPA (Área de Preservação Ambiental – APA Gama e Cabeça de Veado) in the Federal District (Unesco 2002).

The floristic composition of the cerradão vegetation in the REBIO was examined by undertaking collections every two weeks during the period between September/2007 and November/2008. The cerradão vegetation (which differs from the adjacent dense cerrado vegetation by its more robust phytophysiognomy) within the reserve was surveyed by following a zigzag route through its entire area.

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Characteristics such as plant size and color and the presence of odors or latex were noted. Species identifications were carried out by comparisons with herbarium samples deposited in the University of Brasília (UB), Brasília Botanical Garden (HEPH), and IBGE (IBGE) herbaria, as well as by consulting the literature and taxonomists. In addition to the species collected during our survey, the floristic list includes species encounter during a phytosociological study of the arboreal layer of the same area undertaken by Silva (2009). Some of the species collected in the latter study were only encountered in their vegetative phase in the present survey and were not assigned collection numbers.

The data gathered in the present survey were compared to plant lists published by Mendonça et al. (2008) as the vascular flora of the Cerrado biome, by Proença et al. (2001) as the phanerogamic flora of the Federal District, and by Felfili et al. (2004) as the vascular flora of the Gama and Cabeça de Veado EPA, as well as in posterior publications as the phanerogamic flora of the Federal District series (Assis 2002, Carvalho-Silva & Cavalcanti 2002, Lombardi 2002, Mendonça & Amaral Junior 2002, Ribeiro & Proença 2002, Chacon et al. 2003, Ferreira et al. 2003, Groppo 2003, Lima & Pirani 2003, Pontes & Mello-Silva 2003, Silva & Valente 2003, França 2005, Silva & Barros 2005, Fiaschi 2006, Martins & Filgueiras 2006, Pastore & Cavalcanti 2006, Dittrich et al. 2007, Groppo & Pirani 2007).

The present survey considered: trees belonging to the arboreal layer, shrubs belonging to the shrub-layer, subshrubs, herbaceous plants, and climbers (lianas in general) composing the herbaceous layer, in order to allow comparisons with other floristic surveys, including Proença et al. (2001), Felfili et al. (2004), and Mendonça et al. (2008). Voucher specimens were deposited in the UB herbarium, and duplicates incorporate into the HEPH and UFMT (Universidade Federal do Mato Grosso) herbaria.

Synonyms were verified by consulting taxonomic revisions of specific groups as well as the databank sites of the Missouri Botanical Garden – W³Tropicos (2008) and the International Plant Names Index – IPNI (2008). The botanical classification system followed the recommendations of the Angiosperm Phylogeny Group II (APG II 2003) for the phanerogams flora, and Smith et al. (2006) for the pteridoflora.

RESULTS AND DISCUSSION

We encountered 282 species belonging to 194 genera and 75 plant families in the Cerradão REBIO, of which 115 (40.78%) were arboreal species, 62 (21.99%) were shrubs, and 105 (37.23%) made up the herbaceous stratum (54 herbs, 31 subshrubs, and 20 climbers) (table 1), resulting in ratios of 0.91 herbaceous species and 0.54 shrub species for each arboreal species. The data of Felfili et al. (2004) for cerradão sites in the Gama and Cabeça de Veado EPA in the Federal District (DF) yielded portions of 0.67 herbaceous species and 0.41 shrub species for each tree species; Proença et al. (2001) found 0.53 herbaceous plant species and 0.45 shrubs per arboreal species in cerradão sites in the Federal District; while Mendonça et al. (2008) reported portions of 1.05 herbaceous species and 0.61 shrubs for each arboreal layer species in cerradão sites in the Cerrado biome.

Table 1. The vascular flora of *cerradão* vegetation in the "REBIO Cerradão", Federal District, Brazil. Species identified by family, stratum, and phytophysiognomy according to the literature: Proença et al. 2001, Assis 2002, Carvalho-Silva & Cavalcanti 2002, Lombardi 2002, Mendonça & Amaral Junior 2002, Ribeiro & Proença 2002, Chacon et al. 2003, Ferreira et al. 2003, Groppo 2003, Lima & Pirani 2003, Pontes & Mello-Silva 2003, Silva & Valente 2003, Felfili et al. 2004, França 2005, Silva & Barros 2005, Fiaschi 2006, Martins & Filgueiras 2006, Pastore & Cavalcanti 2006, Dittrich et al. 2007, Groppo & Pirani 2007, Mendonça et al. 2008. (* = exotic/invasive; S = savanna sensu stricto; S(*ls*) = savanna sensu lato; C = *cerradão*; F = forest; GF = gallery forest; MF = mesophytic/dry forest; -- = absent from the lists; Coll. N. = number of collection of JS Silva).

Family	Species	Stratum	Phytophysiognomy	Coll. N.
Acanthaceae	*Justicia lanstyakii*	Herb	S(*ls*), S, GF	16
Alstroemeriaceae	*Alstroemeria gardneri*	Herb	S	369
Amaranthaceae	*Gomphrena agrestis*	Herb	S, C	482
	Pfaffia denudata	Herb	S	218
Anacardiaceae	*Anacardium humile*	Shrub	S, C	4
	Astronium fraxinifolium	Tree	S, C, GF, MF	20
Annonaceae	*Annona crassiflora*	Tree	S, C, GF	236
	A. tomentosa	Shrub	S, C, GF	149
	Duguetia furfuracea	Shrub	S, C, GF	169
	Guatteria sellowiana	Tree	F, GF	--
	Xylopia aromatica	Tree	S, C, GF, MF	69

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Family	Species	Stratum	Phytophysiognomy	Coll. N.
	X. brasiliensis	Tree	S, C, GF	--
	X. sericea	Tree	C, F, GF, MF	57
Apocynaceae	*Aspidosperma macrocarpon*	Tree	S, C, MF	154
	A. spruceanum	Tree	S(*ls*), GF, MF	--
	A. subincanum	Tree	F, GF, MF	--
	A. tomentosum	Tree	S, C, GF, MF	501
	Ditassa obcordata	Shrub	S, C, F, GF	447
	Ditassa retusa	Climber	S, GF	614
	Hancornia speciosa	Tree	S, C	72
	Odontadenia lutea	Climber	S, C, GF, MF	209
	Prestonia coalita	Climber	S(*ls*), F, GF, MF	358
Aquifoliaceae	*Ilex conocarpa*	Tree	S, C, GF	7
Araliaceae	*Schefflera macrocarpa*	Tree	S, C, GF	172
Arecaceae	*Allagoptera campestris*	Shrub	S, C	203
	Syagrus comosa	Shrub	S, C, GF	356
	S. flexuosa	Shrub	S, C, GF	74
Asteraceae	*Achyrocline satureoides*	Herb	S(*ls*), S, GF	547
	Aspilia foliacea	Herb	S	243
	Baccharis dracunculifolia	Subshrub	S(*ls*), GF	263
	B. salzmannii	Shrub	S(*ls*)	120
	Campuloclinium megacephalum	Subshrub	S, F, GF	384
	Chromolaena laevigata	Shrub	S, F, GF	405
	C. leucocephala	Shrub	S	177
	Echinocoryne holosericea	Herb	S	534
	Elephanthopus mollis *	Herb	S, C, F, GF, MF	527
	Emilia fosbergii *	Herb	S(*ls*)	258
	Eremanthus glomerulatus	Shrub	S, C, GF	159
	Gochnatia floribunda	Shrub	S(*ls*), S, F	73
	Hoehnephytum trixoides	Subshrub	S	46
	Icthyothere latifolia	Subshrub	S, F	368
	Lepidaploa aurea	Shrub	S, GF	99
	Lessingianthus compactiflorus	Subshrub	S, GF	362
	Piptocarpha macropoda	Tree	S, F, GF, MF	115
	P. rotundifolia	Tree	S, C	487
	Symphyopappus compressus	Subshrub	S, GF	292
	Trichogonia salviaefolia	Herb	S, GF	259
	Tridax procumbens *	Herb	MF	386
	Vernonia rubriramea	Shrub	S, C, GF	87
	Wedelia bishopii	Herb	S	344
Balanophoraceae	*Langsdorffia hypogaea*	Herb	C, F, GF	517
Bignoniaceae	*Adenocalymma pedunculatum*	Shrub	S	213
	Anemopaegma acutifolium	Subshrub	S	519
	Cuspidaria sceptrum	Climber	S, C, GF, MF	176
	Fridericia platyphylla	Climber	S, C, GF	381
	Handroanthus ochraceus	Tree	S, C, GF	98
	H. serratifolius	Tree	S(*ls*), S, F, GF, MF	59
	Jacaranda ulei	Subshrub	S, GF	103
	Zeyheria montana	Shrub	S, C	118
Blechnaceae	*Blechnum australe* supbsp. *auriculatum*	Herb	--	274
Boraginaceae	*Cordia truncata*	Subshrub	S	389
Bromeliaceae	Bromeliaceae sp.	Herb	--	520
Burseraceae	*Protium ovatum*	Shrub	S, F, GF, MF	25

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Family	Species	Stratum	Phytophysiognomy	Coll. N.
Caryocaraceae	*Caryocar brasiliense*	Tree	S, C	95
Celastraceae	*Cheiloclinium cognatum*	Tree	GF	277
	Plenckia populnea	Tree	S, C, GF	205
	Salacia crassifolia	Shrub	S, GF	70
Chrysobalanaceae	*Couepia grandiflora*	Tree	S, C, GF, MF	502
Clusiaceae	*Kielmeyera abdita*	Shrub	S	235
	K. coriacea	Tree	S, C, GF	81
	K. speciosa	Tree	S, F, GF	--
Combretaceae	*Terminalia argentea*	Tree	S, C, GF	77
	T. fagifolia	Tree	S, C, GF, MF	109
Connaraceae	*Connarus suberosus*	Tree	S, C	556
Convolvulaceae	*Ipomoea procumbens*	Climber	S	328
	Merremia contorquens	Climber	S	467
Cucurbitaceae	*Cayaponia tayuya*	Climber	S, F, GF	343
Cunoniaceae	*Lamanonia ternata*	Tree	S(*ls*), C, F, GF	--
Cyperaceae	*Cyperus laxus*	Herb	S(*ls*), GF	270
	Rhynchospora consanguinea	Herb	S, GF	347
	R. exaltata	Herb	S, C, F	47
Dichapetalaceae	*Tapura amazonica*	Tree	GF, MF	603
Dilleniaceae	*Davilla elliptica*	Shrub	S, GF	155
Dioscoreaceae	*Dioscorea dodecaneura*	Climber	GF	604
Ebenaceae	*Diospyros hispida*	Tree	S, C, GF, MF	--
Erythroxylaceae	*Erythroxylum daphnites*	Tree	S(*ls*), S, C, GF, MF	--
	E. deciduum	Shrub	S, C, F, GF	607
	E. suberosum	Shrub	S, F	152
Euphorbiaceae	*Dalechampia caperonioides*	Herb	S	342
	Manihot violacea	Shrub	S	337
	Maprounea guianensis	Tree	S, C, GF, MF	5
Fabaceae	*Acosmium dasycarpum*	Tree	S, C, GF	326
	Bauhinia cf. *dumosa*	Shrub	S	425
	B. rufa	Subshrub	S, C, GF	608
	Bowdichia virgilioides	Tree	S, C, GF, MF	557
	Calliandra dysantha	Subshrub	S(*ls*), S, C, GF	43
	Centrosema brasilianum	Climber	S(*ls*), GF	473
	Chamaecrista conferta	Subshrub	S	85
	Copaifera langsdorffii	Tree	S, C, GF, MF	577
	Crotalaria flavicoma	Herb	S(*ls*), S, GF	376
	C. cf. *grandiflora*	Shrub	S(*ls*), GF	418
	Dalbergia miscolobium	Tree	S, C, GF	233
	Dimorphandra mollis	Tree	S, C, GF	237
	Enterolobium gummiferum	Tree	S, C, GF	--
	Galactia boavista	Herb	S(*ls*)	214
	G. grewiaefolia	Subshrub	S, C	372
	Hymenaea stigonocarpa	Tree	S, C, GF	271
	Hymenolobium heringeranum	Tree	F, GF, MF	--
	Machaerium acutifolium	Tree	S, C, GF, MF	60
	M. opacum	Tree	S, C, MF	--
	Mimosa somnians	Subshrub	S(*ls*), S, C, GF	345
	M. velloziana *	Shrub	S(*ls*), GF	599
	Periandra mediterranea	Shrub	S, C, GF	91
	Piptadenia gonoacantha	Tree	GF, MF	611
	Plathymenia reticulata	Tree	S, C	452

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Family	Species	Stratum	Phytophysiognomy	Coll. N.
	Platypodium elegans	Tree	S(*ls*), S, C, GF, MF	192
	Pterodon pubescens	Tree	S, C, GF	112
	Stryphnodendron adstringens	Tree	S, C	490
	Stylosanthes guianensis	Herb	S(*ls*), S	114
	Tachigali vulgaris	Tree	S, C, GF	--
	Vatairea macrocarpa	Tree	S, C, GF	--
Gentianaceae	*Voyria aphylla*	Herb	F, GF	399
Hypericaceae	*Vismia glaziovii*	Tree	C, F, GF	267
Icacinaceae	*Emmotum nitens*	Tree	S, C, GF	83
Lamiaceae	*Aegiphila lhotzkiana*	Tree	S, C, GF	244
	Hypenia brachystachys	Subshrub	S(*ls*), S, C, GF	538
	Hyptis lythroides	Subshrub	S	127
	H. rubiginosa	Subshrub	S	107
	H. villosa	Herb	S	133
Lauraceae	*Cassytha filiformis* *	Herb	S	364
	Endlicheria paniculata	Tree	GF	254
	Nectandra reticulata	Tree	GF	--
	Ocotea aciphylla	Tree	GF	--
	O. diospyrifolia	Tree	S(*ls*), S, GF	498
	O. pomaderroides	Tree	S(*ls*), S, GF	9
	O. spixiana	Tree	S, C, GF	21
Loganiaceae	*Antonia ovata*	Tree	S, C, GF	497
	Strychnos pseudoquina	Tree	S, C	28
Loranthaceae	*Phthirusa ovata*	Herb	S, GF, MF	151
	Psittacanthus robustus	Herb	S, GF	226
Lythraceae	*Cuphea spermacoce*	Subshrub	S, C	242
	Diplusodon virgatus	Shrub	S, C, GF	456
	Lafoensia pacari	Tree	S, C, GF, MF	--
Malpighiaceae	*Banisteriopsis anisandra*	Climber	S(*ls*), S, GF	78
	B. argyrophylla	Climber	S(*ls*), S, C, GF, MF	359
	B. megaphylla	Shrub	S, GF	469
	B. stellaris	Climber	S, C, GF	331
	Byrsonima crassifolia	Tree	S, C	79
	B. intermedia	Tree	S(*ls*), GF	183
	B. laxiflora	Tree	S(*ls*), S, GF, MF	150
	B. rotunda	Tree	--	221
	B. sericea	Tree	S(*ls*), S, GF	--
	B. verbascifolia	Tree	S, GF	145
	Heteropterys byrsonimifolia	Tree	S	24
	H. pteropetala	Shrub	S, C, F, GF	330
	Janusia sp.	Climber	--	137
	Peixotoa goiana	Shrub	S	478
	P. reticulata	Shrub	S	543
Malvaceae	*Eriotheca pubescens*	Tree	S(*ls*), S, C, F, GF	--
	Pavonia rosa-campestris	Herb	S, C	117
	Pseudobombax longiflorum	Tree	S,CS, GF, MF	561
	Sida linifolia *	Herb	S, GF	625
	Waltheria indica *	Shrub	S, GF	525
Melastomataceae	*Leandra aurea*	Shrub	S(*ls*), GF	336
	Miconia albicans	Tree	S, C, GF	2
	M. burchellii	Tree	S, C, GF, MF	6
	M. cubatanensis	Tree	S, C, GF, MF	529

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Family	Species	Stratum	Phytophysiognomy	Coll. N.
	M. cuspidata	Tree	S(*ls*), S, C, GF, MF	562
	M. fallax	Shrub	S, C	33
	M. ferruginata	Tree	S, C, GF	8
	M. pepericarpa	Tree	S, GF	14
	M. pohliana	Tree	S, C, GF	558
	Miconia sellowiana	Tree	S, C, GF, MF	573
	Ossaea congestiflora	Shrub	S, F	276
	Tibouchina stenocarpa	Tree	S, C, F, GF	426
Menispermaceae	*Cissampelos pareira* *	Climber	GF	609
Moraceae	*Brosimum gaudichaudii*	Shrub	S, C	66
Myristicaceae	*Virola sebifera*	Tree	S(*ls*), C, GF, MF	26
Myrsinaceae	*Cybianthus densiflorus*	Subshrub	S, F, GF	126
	C. detergens	Subshrub	S(*ls*), S, C, GF	247
	Myrsine coriacea	Tree	S(*ls*), C, GF, MF	147
	M. guianensis	Tree	S(*ls*), S, C, GF, MF	63
Myrtaceae	*Blepharocalyx salicifolius*	Tree	S, C, GF	15
	Campomanesia pubescens	Shrub	S, GF	248
	Eugenia bracteata	Shrub	S(*ls*), S, GF	174
	E. dysenterica	Tree	S, C, GF	--
	E. punicifolia	Shrub	S, C, MF	451
	Myrcia cordifolia	Shrub	S, F	45
	M. nivea	Shrub	S(*ls*), S, C, GF, MF	65
	M. rostrata	Tree	S	105
	M. rubella	Subshrub	S(*ls*), S	27
	M. tomentosa	Tree	S, C, GF, MF	100
	Pimenta pseudocaryophyllus	Tree	S, GF	446
	Psidium firmum	Shrub	S, GF	595
	P. laruotteanum	Shrub	S, C, GF	157
	Siphoneugena densiflora	Tree	S, C, GF	17
Nyctaginaceae	*Guapira areolata*	Tree	GF	--
	G. graciliflora	Tree	S(*ls*), S, C, GF	12
	G. noxia	Tree	S, C, GF	602
	G. opposita	Tree	S(*ls*), GF, MF	23
	Neea theifera	Tree	S, C, GF	161
Ochnaceae	*Ouratea confertiflora*	Shrub	S, C	121
	O. floribunda	Subshrub	S, GF	474
	O. hexasperma	Shrub	S, C	40
	O. riedeliana	Shrub	S	180
Opiliaceae	*Agonandra brasiliensis*	Tree	S, C, GF, MF	--
Orchidaceae	*Oncidium varicosum*	Herb	GF	318
Oxalidaceae	*Oxalis suborbiculata*	Subshrub	S(*ls*), S, C, GF	206
Passifloraceae	*Passiflora cerradensis*	Climber	C, GF	610
Peraceae	*Pera glabrata*	Shrub	S(*ls*), S, C, GF, MF	38
Piperaceae	*Piper aduncum*	Shrub	C, GF	273
Poaceae	*Aristida pendula*	Herb	S(*ls*)	523
	Axonopus barbigerus	Herb	S	524
	Echinolaena inflexa	Herb	S	339
	Ichnanthus pallens	Herb	S, GF	288
	I. bambusiflorus	Herb	S, F, GF	616
	Melinis minutiflora *	Herb	S, GF	287
	Mesosetum loliiforme	Herb	S	620
	Panicum cervicatum	Herb	S, C	367

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Family	Species	Stratum	Phytophysiognomy	Coll. N.
	P. maximum *	Herb	S(*ls*), GF	298
	P. selowii	Herb	S, C, F, GF	410
	Paspalum polyphyllum	Herb	S, GF	521
	Schizachyrium sanguineum *	Herb	S, GF	619
	S. tenerum	Herb	S, C	621
	Trachypogon sp.1	Herb	--	623
	Trachypogon sp.2	Herb	--	624
	Urochloa brizantha *	Herb	S(*ls*), GF	615
	U. decumbens *	Herb	S	264
Polygalaceae	*Bredemeyera velutina*	Shrub	S(*ls*), S, GF	295
	Polygala violacea	Herb	S	257
Proteaceae	*Roupala montana*	Tree	S, GF	239
Rubiaceae	*Alibertia elliptica*	Shrub	S(*ls*), S, F, GF	80
	A. macrophylla	Tree	S(*ls*), S, C, GF, MF	--
	A. sessilis	Tree	S(*ls*), S, GF, MF	144
	Amaioua guianensis	Tree	S(*ls*), GF	--
	Chomelia ribesioides	Subshrub	S, GF	234
	Coccocypselum aureum	Herb	S(*ls*), S, C, GF	398
	Declieuxia fruticosa	Subshrub	S, GF	382
	Ferdinandusa elliptica	Tree	S, GF	18
	Galium noxium	Herb	GF	265
	Palicourea marcgravii	Subshrub	C, GF	284
	P. officinalis	Subshrub	S, GF	279
	P. rigida	Shrub	S, GF	241
	Psychotria hoffmannseggiana	Subshrub	C, GF	297
	P. prunifolia	Subshrub	C, GF	272
	P. sciaphila	Subshrub	S(*ls*), C, GF	291
	Sabicea brasiliensis	Subshrub	S, GF	334
	Spermacoce poaya	Herb	S(*ls*), S	374
	Tocoyena formosa	Shrub	S, C, GF	245
Rutaceae	*Esenbeckia pumila*	Shrub	S, GF	208
	Spiranthera odoratissima	Shrub	S, C, GF	575
	Zanthoxylum rhoifolium	Tree	S(*ls*), C, GF	606
Salicaceae	*Casearia grandiflora*	Shrub	S(*ls*), S, C, GF, MF	346
	C. sylvestris	Shrub	S, C, GF	552
Sapindaceae	*Matayba guianensis*	Tree	S, C, GF, MF	220
	Serjania erecta	Climber	S, F, GF	375
	S. lethalis	Climber	S(*ls*), S, GF	160
	S. ovalifolia	Climber	S(*ls*), GF	111
Sapotaceae	*Pouteria ramiflora*	Tree	S, C, GF	576
Schizaeaceae	*Anemia phyllitidis*	Herb	S, GF, MF	269
Simaroubaceae	*Simarouba versicolor*	Tree	S, C, GF, MF	108
Siparunaceae	*Siparuna guianensis*	Tree	S, C, GF, MF	261
Smilacaceae	*Smilax brasiliensis*	Climber	S, MF	190
Solanaceae	*Solanum paniculatum* *	Shrub	S, C, GF	116
Styracaceae	*Styrax camporum*	Tree	S, C, GF, MF	251
	S. ferrugineus	Tree	S, C, GF	39
Symplocaceae	*Symplocos mosenii*	Tree	S(*ls*), S, C, GF	11
	S. nitens	Tree	F, GF	455
Turneraceae	*Turnera lamiifolia*	Herb	S(*ls*), S	488
Verbenaceae	*Lantana camara* *	Shrub	S(*ls*), GF, MF	296
	L. trifolia *	Shrub	S, MF	266

continue

continuation

Family	Species	Stratum	Phytophysiognomy	Coll. N.
	Lippia rotundifolia	Shrub	S	511
	Stachytarpheta polyura	Herb	S(*ls*), S, GF	293
Vochysiaceae	*Callisthene major*	Tree	S(*ls*), S, GF, MF	596
	Qualea dichotoma	Tree	S(*ls*), S, C, GF, MF	--
	Q. grandiflora	Tree	S, C, GF	283
	Q. multiflora	Tree	S, C, GF	104
	Q. parviflora	Tree	S, C, GF	56
	Vochysia elliptica	Tree	S	--
	V. rufa	Tree	S, C, GF	--
	V. thyrsoidea	Tree	S, C	165
	V. tucanorum	Tree	S(*ls*), S, C, GF, MF	49

Higher proportions of arboreal species in cerradão sites as compared to herbaceous or shrub forms are not typical of the Cerrado biome as a whole, which consistently shows higher proportions of species in the herbaceous stratum. Mendonça et al. (2008) noted, however, that all of the subshrubs, climbers and lianas they identified as belonging to the herbaceous stratum could be considered as belonging to the shrub or even arboreal layer (as they were reasonably large, as in the case of woody vines). Other lists, including that obtained in the present study, have confirmed the predominance of the arboreal stratum in the cerradão phytophysiognomies.

Batalha & Mantovani (2001) reported 148 species belonging to 113 genera and 45 families in an area of cerradão in São Paulo State, Brazil, with a proportion of herbaceous to woody species (0.8:1.0) similar to that of the present study. Comparisons of the richness values between any two areas, however, must take into consideration the collection frequencies and the flora types considered (vascular, or only phanerogams).

The families Fabaceae, Asteraceae, Rubiaceae, Poaceae, Malpighiaceae, Myrtaceae, Melastomataceae, Apocynaceae, and Vochysiaceae had the greatest species richness in the present study (52.12% of the total number of species encountered). In relation to the numbers of genera, Fabaceae was again the most abundant family, followed by Asteraceae, Rubiaceae, Poaceae, Myrtaceae, and Bignoniaceae; *Miconia* was the most representative genus (nine species).

Rubiaceae, Myrtaceae, Fabaceae, Vochysiaceae, and Melastomataceae were also among the families demonstrating the greatest richnesses of woody species in areas of cerradão studied by Pereira-Silva et al. (2004); Fabaceae, Malvaceae, and Myrtaceae stood out among the cerradão families in Pantanal de Nhecolândia in Mato Grosso do Sul State (MS) (Salis et al. 2006); and Fabaceae and Vochysiaceae were the richest families identified in cerrado sensu stricto sites by Assunção & Felfili (2004) and by Costa & Araújo (2001), with Myrtaceae also showing high richness in the latter survey. Studies undertaken in forest areas demonstrated different results, however. The families Fabaceae, Melastomataceae, Myrtaceae, Rubiaceae, Apocynaceae, and Vochysiaceae were cited as demonstrating the greatest species richness in gallery forests, with important contributions also by Sapotaceae, Euphorbiaceae, and Moraceae (poorly represented in the present study) (Marimon et al. 2002, Silva Junior 2004); and Fabaceae, Bignoniaceae, Malvaceae, and Anacardiaceae were well represented in a semi-deciduous dry forest in Diorama, Goiás State (GO) (Santos-Diniz & Souza 2011). It can therefore be seen that, in spite of the floristic differences between the phytophysiognomies, the richness values observed in the Cerradão REBIO were close to those reported for cerrado sensu stricto (Felfili et al. 1994, Costa & Araújo 2001, Silva et al. 2002). According to Souza et al. (2010), the importance of Fabaceae in terms of species richness in the Cerrado biome is due to the capacity of many of its species to fix nitrogen, enabling them to growth in poor and degraded soils.

Lopes (1984) noted that plant distributions are controlled by very basic factors such as the climate, soils, and the availability of water and nutrients, but can also be greatly influenced by latitude, burning frequencies, water table depth, animal pasturing, and anthropogenic factors – which reinforces the importance of floristic and phytosociological studies at many different sites, as each area would be expected to have specific physical conditions and therefore unique population structures (Santos-Diniz & Souza 2011).

The data published in the three plant lists used for comparisons in the present work, in the flora of the

Federal District, and in floristic and phytosociological studies undertaken in both savanna and cerrado forest phytophysiognomies (Felfili et al. 1994, Silva Junior et al. 1998, Marimon et al. 2002, Silva et al. 2002, Assunção & Felfili 2004, Pereira-Silva et al. 2004, Silva Junior 2004, Balduino et al. 2005, Santiago et al. 2005, Salis et al. 2006) indicated that 91% of the fully-identified species encountered in the REBIO cerradão were common to cerrado areas, while 79.5% were common to forest sites. The species commonly encountered in both formations represent 72.3% of the total, while only 60.43% of the fully identified species of the REBIO were reported in other cerradão surveys. No single species was exclusive to the cerradão phytophysiognomy.

The elevated species richness identified in the study area (with almost 95% species being native to the Cerrado biome) indicates the importance of this conservation area, for it not only protects a significant area of cerradão vegetation (a phytophysiognomy poorly represented in other designated conservation areas) but also conserves species such as *Copaifera langsdorffii* (*copaíba*), *Pterodon pubescens* (*sucupira-branca*), *Caryocar brasiliense* (*pequizeiro*), *Eugenia dysenterica* (*cagaiteira*), *Vochysia thyrsoidea* (*gomeira*), *Vochysia tucanorum* (*pau-doce*), *Pseudobombax longiflorum* (*embiruçu*), *Dalbergia miscolobium* (*jacarandá*), *Aspidosperma* spp. (*perobas*), and *Tabebuia* spp. (*ipês*) that have been designated as protected elements of the Ecological Heritage of the Federal District (Felfili & Santos 2002).

The results obtained in the present study enrich our knowledge of the cerradão flora and can serve as subsidies for the elaboration of management programs for this conservation area (REBIO).

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